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### Claims

1. An arrangement for connecting a processing node in a distributed system containing fail-uncontrolled  
5 processing nodes, the arrangement comprising:  
    receiver means for receiving signals from  
    another processing node of the system, and  
    node guardian means coupled to the receiver  
    means wherein the node guardian means includes  
10 switch means for receiving a plurality of  
    unidirectional input signals,  
    logic means coupled to the switch means for  
    combining the plurality of received input signals  
    according to a predetermined logic function, and  
15 control means coupled to the switch means for  
    controlling application of the plurality of received  
    signals to the logic means for controlling reception  
    of signals thereat so as to reduce reception by the  
    processing node of uncontrolled transmission from  
20 another processing node of the system.
2. The arrangement of claim 1 wherein the predetermined  
logic function comprises an OR logic function.
- 25 3. The arrangement of claim 1 or 2 wherein the control  
means is arranged to control the switch means according  
to a predetermined TDMA schedule.
4. A distributed system comprising the arrangement  
30 according to claim 1, 2, or 3.

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5. The system of claim 4 further comprising at least one processing node having bus guardian means.

6. The system of claim 5 comprising:

- 5 a first processing node having a node guardian according to claim 1, 2, or 3,  
a second processing node having a node guardian according to claim 1, 2, or 3,  
a first group of processing nodes having bus  
10 guardian means, and  
a second group of processing nodes having bus guardian means,

wherein the first group is coupled to the first and second processing nodes via a first common channel, and  
15 the second group is coupled to the first and second processing nodes via a second common channel,  
the first group and the first processing node forming a first error containment region, and the second group and the second processing node forming a second error  
20 containment region.

7. The system of claim 6, the first group further being coupled to the first and second processing nodes via a third common channel, and the second group further being  
25 coupled to the first and second processing nodes via a fourth common channel.

8. The system of claim 5 or 6 further comprising:  
30 a third processing node having a node guardian according to claim 1, 2, or 3, and  
a fourth processing node having a node guardian according to claim 1, 2, or 3,

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wherein the third processing node is coupled to the first common channel, the fourth processing node is coupled to the second common channel, and the first, second, third and fourth processing nodes are cross-coupled,  
5 the third processing node being in the first error containment region, and the fourth processing node being in the second error containment region.

9. A system of claim 4 comprising a plurality of  
10 processing nodes each having a node guardian means according to claim 1, 2 or 3 coupled by unidirectional broadcast paths, wherein each of the plurality of processing nodes is assigned exclusively to one of the unidirectional broadcast paths for the purpose of  
15 transmission between the plurality of processing nodes.

10. The system of any one of claims 5-9 wherein the system is one of A-B:  
A a TTP/C system,  
20 B a FlexRay™ system.

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11. A method of operating a processing node in a fail-uncontrolled distributed system, the method comprising:

providing receiver means for receiving signals from another processing node of the system, and

5 providing node guardian means coupled to the receiver means for receiving a plurality of unidirectional input signals, wherein the node guardian means includes

logic means for combining the plurality of received input signals according to a predetermined logic function, and

control means for controlling application of the plurality of received signals to the logic means for controlling reception of signals thereat so as to reduce reception by the processing node of uncontrolled transmission from another processing node of the system.

12. The method of claim 11 wherein the predetermined logic function comprises an OR logic function.

13. The processing node of claim 11 or 12 wherein the control means controls the switch means according to a predetermined TDMA schedule.

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14. A method of operating a distributed system comprising the method of operating a processing node according to claim 11, 12, or 13.

30 15. The method of claim 14 further comprising providing at least one processing node having bus guardian means.

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16. The method of claim 15 comprising:  
operating a first processing node having a node  
guardian means according to claim 11, 12, or 13,  
operating a second processing node having node  
guardian means according to claim 11, 12, or 13,  
5 providing a first group of processing nodes having  
bus guardian means, and  
providing a second group of processing nodes having  
bus guardian means,
- 10 wherein the first group is coupled to the first and  
second processing nodes via a first common channel, and  
the second group is coupled to the first and second  
processing nodes via a second common channel,  
the first group and the first processing node forming a  
15 first error containment region, and the second group and  
the second processing node forming a second error  
containment region.
17. The method of claim 16, the first group further  
20 being coupled to the first and second processing nodes  
via a third common channel, and the second group further  
being coupled to the first and second processing nodes  
via a fourth common channel.
- 25 18. The method of claim 15 or 16 further comprising:  
operating a third processing node having node  
guardian means according to claim 11, 12, or 13, and  
operating a fourth processing node having node  
guardian means according to claim 11, 12, or 13,  
30 wherein the third processing node is coupled to the first  
common channel, the fourth processing node is coupled to

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the second common channel, and the first, second, third  
and fourth processing nodes are cross-coupled,  
the third processing node being in the first error  
containment region, and the fourth processing node being  
5 in the second error containment region.

19. The method of any one of claims 15-18 wherein the  
system is one of A-B:

A a TTP system,

10 B a FlexRay™ system.